Green Tips: Composting as a Solution to Environmental and Health Challenges

Daniil Ivanov, Rutgers New Jersey Medical School, Class of 2027

Food systems are an integral part life, encompassing everything from growing and accessing food to consuming it and disposing of food waste. However, large-scale use of fertilizers and pesticides in agriculture is associated with heavy metal contamination of agricultural products, runoff pollution into water systems, and health problems like solid organ tumors, hematological malignancy, infections, and diarrhea [1, 2, 3]. Food waste also has environmental ramifications, comprising 24% of municipal solid waste found in landfills and producing 58% of landfill methane emissions [4]. Methane, in turn, is a highly potent greenhouse gas and is a precursor to tropospheric ozone which is associated with asthma, reduced lung function, and COPD [5].

One way that people can make an impact is by reducing one's contribution to landfilled food waste by composting at home, which when properly done is a process that does not produce any methane. That compost can then be utilized as nutrient dense soil for gardening at home or in a community garden. As an added benefit, gardening has been shown to reduce depression, anxiety, and BMI while improving one's quality of life, sense of community, and satisfaction [6,7].

Why Talk to Families About Composting

A discussion on composting with patients and families is a vehicle for talking about many health concerns and health related behaviors. It introduces ideas of healthy lifestyles through eating diets high in fresh fruits and vegetables that can produce high-quality soil. That soil can be used in keeping houseplants or starting a garden, both of which are positive health behaviors. Those gardens can then produce more fresh fruits, herbs, and vegetables for the family table while reducing exposure to harmful pesticides and fertilizers. Moreso, with a growing awareness of climate change among the youth and the subsequent ecoanxiety and ecological grief associated with this understanding, taking an active role as a family to reduce food waste and its carbon footprint is a way to promote mental wellness in the pediatric population [8].

How to Compost [9]

Composting is the managed aerobic digestion of organic material by microorganisms. It can be done with something as simple as a designated pile in your yard, or with one of many commercially available compost bins, tumblers, and specialized sealed and filtered bins for indoor and apartment use.

To create compost, shred and mix carbon-rich browns (dry leaves or wood chips, shredded paper, cardboard) with nitrogen-rich greens (fruit and vegetable scraps, grass, coffee grounds, eggshells). This can be done by hand, in a blender, or in a paper shredder. There should be at least 2-3 times more browns than greens and the mix

should be moist and well-aerated, otherwise the materials do not break down and can begin to smell. Meat, dairy, and oils are usually avoided as they are more prone to attracting animals and are difficult to fully decompose. If you notice that the mix is not breaking down well, add more browns and turn the pile to aerate it (a compost tumbler is useful for this situation since you can turn the entire bin with a handle). If the mix becomes too dry, some water can be added to moisten it.

A well-maintained compost pile will transform into fresh and nutrient-dense soil within 3-5 months, while a compost bin speeds this process up to a few weeks. This compost can be directly applied for use in garden beds, potting soil, or in your yard for healthy topsoil.

The relatively hands-off process of composting results in nutrient and microorganism rich soil that reduces the need for and impact of fertilizers and pesticides, while also making an impact to reduce greenhouse gas emissions and promoting health.

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